

REMARKS/ARGUMENTS

Claims 7-45 were pending in the application. Claims 7-45 were rejected. No claims have been amended herein. No claims have been cancelled. Accordingly, Claims 7-45 are currently pending. Applicants respectfully request reconsideration and allowance of all pending claims.

**Discussion of Objections**

Claim 40 is objected to because the examiner suggests "full range of the digitized signal" in line 2. Applicants appreciate the Examiner's suggestion and have made the suggested amendment. Accordingly, Applicants traverse the Examiner's objection to Claim 40.

**Discussion of Rejections Under 35 U.S.C. §112, second paragraph**

Claims 33-37 are rejected under 35 U.S.C. 112, second paragraph. Claim 33 recites the limitation "the center parameters" in line 1. There is insufficient antecedent basis for this limitation in the claim. Applicants have amended Claim 33 to change "the center parameters" to -the parameters-, thereby making it consistent with Claim 32 from which it depends. Accordingly, Applicants respectfully traverse the Examiner's rejection of Claims 33-37 as amended.

Claim 45 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, pointing to the phrase "means for down-converting the input signal "to receive a baseband signal". Applicants appreciate the Examiner's diligence in pointing out the issue. Applicants have amended Claim 45 to recite "down-converting the input signal to receive a base-band signal". Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 45 as amended.

**Discussion of Rejections Under 35 U.S.C. §103**

Claims 7, 32, 38, 44 were rejected under 35 U.S.C. 103(a) as being unpatentable over McHale et al. (US Patent 5,781,617) in view of Wang (US Patent 5,822,368) and further in

view of Wiley, deceased et al. (US Patent 4,864,309). Applicants respectfully traverse the Examiner's rejection of these claims in light of the following.

The Examiner stated that:

...wherein the plurality of demodulators recover data synchronously distributed across the plurality of transmission bands in the serial/deserializer transmission system (McHale et al. teaches the communications server (58) of Fig. 1, Fig. 13A, may detect frames or packets including HDLC. HDLC (high-level data link control) is a superset of SDLC (synchronous data link control). Thus the data would be synchronized. McHale et al. also discloses the communications server connected to a communications network (64) which may also include a synchronous optical network (col. 6, lines 25-39). This necessarily indicates, in itself a synchronous system. McHale also discloses the communications network may include a frame relay network, T1, T3, E1, or E3 all which require synchronization at both ends of the transmission channel. Therefore being connected to these types of networks would obviously require that the data be synchronized. McHale et al. does not teach the exact make-up of the demodulator.

Applicants respectfully contend that the Examiner has maintained this language from his previous office action dated Feb. 5, 2008. These arguments were overcome in conversations between Applicants and the Examiner and in the response previously submitted. Nonetheless, in as much as the Examiner has maintained this language, Applicants will once again respond to these statements. Applicants note that the fact that data is transmitted using a protocol that is "synchronous" merely means that timing is shared between the transmitting device and the receiving device. This has absolutely nothing to do with the claimed limitation that the data be synchronously distributed across the plurality of transmission bands. The difference between these two concepts is that the synchronous transmission that is suggested by McHale is synchronous between the transmit and receive devices, whereas the synchronization recited in the claims is between the modulators of the transmitter, which are synchronized to ensure that the data is spread across the transmission bands in a manner that allows the data to be demodulated later and put back together into a single stream of data. While it might be beneficial to synchronize the transmit and receive devices to establish "synchronous communications", this is not the same as synchronizing the data being distributed across the transmission bands. It appears that the Examiner understood this, since he added the Wiley reference and made the following additional comments:

Neither McHale nor Wang explicitly disclose the plurality of the demodulators being synchronous to each other. However, synchronous demodulators are well known in the art. Wiley discloses in Fig. 6 a plurality of demodulators (68) being synchronous to each other (col. 6, lines 15-30).

It should be noted that the Examiner was referring to the receiver side of the network (i.e., the demodulators). Accordingly, this would at best address the limitation of the demodulators being “synchronous to each other”. However, it should be noted that the presently recited claims recite that the data to be demodulated is “synchronously distributed across the plurality of transmission bands in the serial/deserializer transmission system”. There is nothing in Wiley that teaches or suggests that the data to be demodulated is synchronously distributed across the plurality of transmission bands in a serial/deserializer transmission system, or any other type of communication system. In fact the information that is being extracted by Wiley from the signals that are being processed is not even communications data modulated onto the carrier. Therefore, none of the referenced cited by the Examiner teach or suggest this limitation of data **synchronously distributed across [a] plurality of transmission bands.**

Furthermore, while it is clear that Wiley does show demodulators that are referred to as synchronous demodulators, and these synchronous demodulators are all downconverting signals using signals applied to the local oscillator input of the down-converters in the demodulators that are derived from the same reference frequency generator, the circuit disclosed by Wiley is so totally different from the invention recited in Claims 7, et al. that it would be completely unreasonable to combine Wiley with McHale to derive the claimed invention. Simply having a commonly derived LO does not synchronize the demodulators in the manner that is recited in claims such as Claim 7 of the present application. That is, the application recites that:

Data is transmitted at a transmit clock rate of CK1, which can be determined by an internal phase locked-loop from the reference clock signal. Each of these input signals of N-bits can change at the rate of a transmit clock signal CK1. The transmit clock signal CK1 can be less than or equal to  $n\text{GHz}/N$ , where n represents the total desired bit rate for transmission of data from transmitter system 210-p over transmission medium 250....The output signal from symbol mapper 403 can be a complex signal represented by in-phase signal  $I_k(n)$  and a quadrature signal  $Q_k(n)$ , where n represents the nth clock cycle of the clock signal CK1, whose frequency equals the baud rate  $B_k$ .

In addition, Figure 4 shows that each of the elements (Scrambler 401, Encoder 402, Symbol Mapper 403, and DAC 406, 407) are synchronized by CK1. It is by the use of this common clock that the data is synchronously distributed across the transmission band.

Wiley discloses a totally different apparatus. That is, Wiley discloses a radiometer for imaging objects and terrain using RF signals that reflect off the object or terrain to be imaged. Wiley is completely outside the art of communications and networking. The information being demodulated by the demodulators is not received from any communications transmitter and is not a modulated communications signal that has been synchronously distributed across a transmission band. Rather, the synchronous demodulators 68 disclosed by Wiley are actually being used to form a correlator in order to determine the amplitude and phase of a difference between signals received from antennas spaced apart by predetermined amounts in order to generate an image of a source, such as a flying object or a scene including foliage and water, etc. The Examiner justifies the rejection of the combination of references by stating that:

One of ordinary skill in the art would have been motivated to incorporate synchronous demodulators since synchronous sampling provides for simpler demodulators, reduces intersymbol interference and insures proper signal separation.

However, Wiley doesn't teach or suggest any of these as the motivation for using synchronous demodulators. Rather, the reason that Wiley's demodulators are "synchronous" is to ensure the proper cancellation between signals that are received by each of the antenna elements that are spaced apart and which signals are delayed by a predetermined amount through the delay lines 40 and 42 disclosed by Wiley. This cancellation is an important component of the Wiley invention which provides a microwave radiometer system comprising an array of antennas positioned for receiving microwave radiation from a source of such radiation. The antennas are each coupled to a common microwave feeder by mixers which serve to translate the spectra of received radiation at each of the antennas to an intermediate frequency, there being a separate intermediate frequency for each of the antennas.

The requirement to establish a *prima facie* case of obviousness requires that the prior art reference, or references when combined, must provide all of the claim limitations and **must establish that it would be obvious for one of ordinary skill in the art to combine the references in a way that would successfully result in the claimed invention**. As stated by the US Supreme Court in KSR v. Teleflex, the proper analysis should determine whether there was an apparent reason to combine the known elements in the fashion claimed by the

patent at issue. Here there is no apparent reason why one of ordinary skill in the art having knowledge of Wiley would take the correlator of Wiley and use the synchronous demodulator from Wiley together with the disclosed apparatus of McHale.

Accordingly, Applicants respectfully traverse the Examiner's rejection of Claim 7 and Claim 32 that depends from Claim 7.

Regarding the Examiner's rejection of Claims 38, and 44 Applicants contend that the same arguments made in connection with Claim 7 and 32 pertain to Claims 38 and 44.

Claims 8-9, 15-16 were rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368) and Wiley, deceased et al. (US Patent 4,864,309) as applied to claim 7, above and further in view of Baker (US Patent 6,163,563). Applicants respectfully traverse the Examiner's rejection of Claims 8, 9, 15, and 16 for the reasons provided above in connection with Claim 7.

Claim 10 was rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), Wiley, deceased et al. (US Patent 4,864,309) and Baker (US Patent 6,163,563) as applied to claim 9 above, and further in view of Brown et al. (US Patent 6,366,622 B1). Applicants respectfully traverse the Examiner's rejection of Claim 10 for the reasons provided above in connection with Claim 7.

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), Wiley deceased et al. (US Patent 4,864,309) and Baker (US Patent 6,163,563) as applied to claim 8 above, and further in view of Korn (US 2002/0024385 A1). Applicants respectfully traverse the Examiner's rejection of Claims 11-14 for the reasons provided above in connection with Claim 7.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), Wiley, deceased et al. (US Patent 4,864,309), Baker (US Patent 6,163,563) as applied to claim 16 above and further in view Iwamatsu (US Patent 6,034,564). Applicants respectfully traverse

the Examiner's rejection of Claim 17 for the reasons provided above in connection with Claim 7.

Claims 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), Wiley, deceased et al. (US Patent 4,864,309), Baker (US Patent 6,163,563 and Iwamatsu (US Patent 6,034,564) as applied to claim 17 above, and further in view of Koslov (US Patent 6,044,112). Applicants respectfully traverse the Examiner's rejection of Claims 18-22 for the reasons provided above in connection with Claim 7.

Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), Wiley, deceased et al. (US Patent 4,864,309) and Baker (US Patent 6,163,563) as applied to claim 8 above, and further in view of LeFever (US Patent 4,599,732). Applicants respectfully traverse the Examiner's rejection of Claims 23-24 for the reasons provided above in connection with Claim 7.

Claims 25, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), Wiley, deceased et al. (US Patent 4,864,309) and Baker (US Patent 6,163,563) as applied to claim 8 above, and further in view of Sasaki (US Patent 6,121,828). Applicants respectfully traverse the Examiner's rejection of Claims 25, 28-29 for the reasons provided above in connection with Claim 7.

Claims 26-27, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), Wiley, deceased et al. (US Patent 4,864,309) and Sasaki (US Patent 6,121,828) as applied to claim 25 above and further in view of Saulnier et al. (US Patent 4,878,029). Applicants respectfully traverse the Examiner's rejection of Claims 26-27, 30-31 for the reasons provided above in connection with Claim 7.

Claim 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368), and Wiley, deceased et al. (US Patent 4,864,309) as applied to claim 32 above, and further in

view Isard et al. (US Patent 5,533,050). Applicants respectfully traverse the Examiner's rejection of Claims 33-37 for the reasons provided above in connection with Claim 7.

Claims 39, 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of McHale et al. (US Patent 5,781,617), Wang (US Patent 5,822,368) and Wiley, deceased et al. (US Patent 4,864,309) as applied to claim 7, above and further in view of Baker (US Patent 6,163,563). Applicants respectfully traverse the Examiner's rejection of Claims 39, 41-43 for the reasons provided above in connection with Claim 7.

Claim 40 was rejected under 35 U.S.C. 103(a) as being unpatentable over McHale et al. (US Patent 5,781,617) in view of Wang (US Patent 5,822,368) and further in view of Wiley, deceased et al. (US Patent 4,864,309) as applied to claim 38 above, and further in view of Brown et al. US Patent 6,366,622 B1) and Korn (US 2002/0024385 A1). Applicants respectfully traverse the Examiner's rejection of Claim 40 for the reasons provided above in connection with Claim 7.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindholm (US Patent (6,477,207 B1) in view Isaksson et al. (US Patent 6,865,232 B1). Applicants respectfully traverse the Examiner's rejection of Claim 45 for the reasons provided above in connection with Claim 7.

CONCLUSION

Applicants believe that all claims pending in the application are allowable. Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

This is a response to the Office Action mailed on December 22, 2008, and as such, is submitted together with a request for a one month extension of time and the fee required for such a one month extension of time.

If there are any other fees due in connection with the filing of the response, please charge the fees to our Deposit Account No. 50-4613. If a fee is required for an extension of time under 37 CFR 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned.

Respectfully submitted,

Dated: December 22, 2008

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